# Discussion of *"Cutting out the Middleman: Crowdinvesting, Efficiency, and Inequality"* by Hans Peter Grüner and Christoph Siemroth[1]

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September 8, 2016

2nd International Workshop on P2P Financial Systems
September 8, 2016

[1] Disclaimer: The views expressed in this presentation are solely the responsibility of the author and should not be interpreted as reflecting the views of the Executive Board of Sveriges Riksbank.

# The big picture

- Investment-based crowdfunding platforms:
  - Growing importance: global equity crowdfunding volume in 2015 ca. 2.5bn U.S. Dollars; yearly growth around 70%[2]
  - Academic research: e.g. survey by Belleflamme et al. (2015)
- This paper:
  - Study the role of decentralized investment processes in aggregating information (*'wisdom of the crowd'*)
  - Consumers with correlated tastes for 'new consumption goods' can invest and make inference on the future profitability of firms based on their own taste
  - How does the wealth distribution affect the ability of the crowd to achieve an efficient capital allocation? Is there a role for financial intermediaries?

[2] See Massolution Crowdfunding Industry 2015 Report.

# My discussion

- Promising project! The authors do an excellent job in conveying the key insights and the paper is well written.

In my discussion I focus on:

1. Model, key frictions and intuition
2. Comments on motivation, assumptions, robustness
3. Additional comments

# Frictions and features

2 key frictions: incomplete information and incomplete markets

- There is **aggregate demand uncertainty**:
  - consumers have private information on their own taste
  - taken together, consumers hold enough information to perfectly predict the future profitability of investments
  - no information through market prices that could guide investors
- Due to incomplete markets the ability of individual consumers to invest depends on their wealth
  - If the wealth and income distribution are sufficiently mismatched, the **'wisdom of the poor' is lost** since they cannot borrow against future income (or find it costly to do so)
- Role for investment funds ('financial intermediaries') who have no information to start with, but investment capital and the ability to acquire information

# Baseline model

- 2 dates
- Continuum of risk-neutral consumer-investors
  - have heterogeneous wealth endowments, $\omega_i$, at $t = 1$ and income, $y_i$, at $t = 2$
  - consume at $t = 2$:

$$u(c_i, x_i, \theta_i) = c_i + \theta_i x_i^{\alpha}, \quad 0 < \alpha < 1, \theta \in \{0, 1\}$$

  - can invest in safe investment with return $R$ and in firms producing new consumption good $x$
- No credit market or forward market for good $x$ at $t = 1$
- $m > 1$ firms who produce good $x$ using a linear technology
- Aggregate demand uncertainty for good $x$ and incomplete info:

$$s := \int_0^1 \theta_i di = \begin{cases} \beta > 1/2 & w.p.\ 1/2 \\ 1 - \beta & w.p.\ 1/2 \end{cases}$$

# The investment problem

How much to invest in firms producing the new good $x$?

- Inference: Bayesian updating based on private signal
- Endowment: wealth inequality

# Results

**First-best**: When poor consumers hold sufficient wealth, then there exists an Pareto-optimal equilibrium where those invest who would like to consume the new good $x$ themselves, $\theta_i = 1$

What if there is a substantial mismatch between the wealth of the poor and their income and consumption tastes?

- The investment allocation is inefficient
- The 'wisdom of the poor' is lost: If the wealthy under-estimate the future demand for the new good (due to different tastes), then supply will fall short of demand due to under-investment
- Investment funds who acquire information about future demand that is better than the information of wealthy customers can improve investment allocation

# Comments 1

- Motivation
  - Empirical fact: wealth is far more concentrated than income ✓
  - Implications for investment allocation if tastes are correlated
    - long-term investment view; product innovations ✓
    - investment in production capacity ?
  - Assumption: The investment outcome is well-defined and the new product is well understood by the crowd
  - Capacity extension / development of customized niche products vs. betting on new technologies
- Alternative: collect non-binding pre-orders to demonstrate potential future demand to wealthy investors or to banks. But:
  - Success on a CFP can be used to signal creditworthiness and, thereby, facilitate access to bank loans or venture capital (Ahlers et al. 2015; Belleflamme et al. 2015)
  - Interesting paper using Kickstarter data: Xu (2015)

# Comments 2

- The main results of the paper are very interesting and the authors give a good intuition
- I would be interested in seeing more on financial intermediaries
  - Investment funds could be modeled in a way that gives them more of a flavor of "financial intermediaries"
  - Funds have informational advantage relative to wealthy consumer-investors. Could there be other aspects? Timing of investments, etc.?
- Policy
  - Constrained inefficiency
  - Instruments: subsidize / tax investments without resorting to progressive taxation

# Additional comments

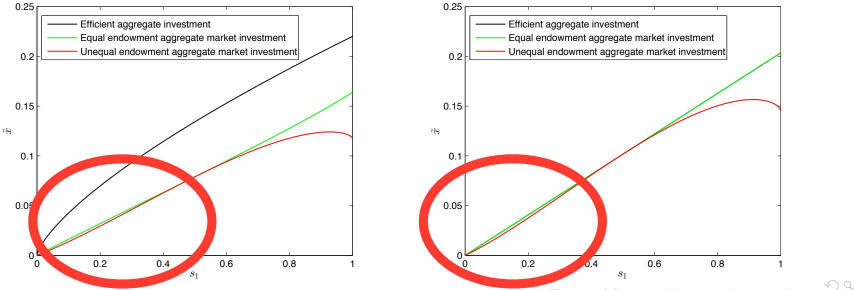
- Skip comments on debt contracts - without a role for interesting features of debt contracts (e.g. default) this does not add much
- Robustness:
  - Increasing / decreasing returns to scale ✓
  - Sequential investments ( ✓)
    - Small investments by poor consumer-investors arrive first: empirical evidence?
    - More to be learned about the dynamics of fundraising games? Perhaps in another paper.
  - Cobb-Douglas utility
- Intensive margin vs. extensive investment margin

# Conclusion

- Very nice paper that should be on your reading list!
- It improves our understanding of important aspects in equity crowdfunding
- Interesting empirical predictions
- Room to explore related questions in future research
- Minor comments

# Minor comments

- I found some useful intuition in the Appendix that is perhaps better suited for the main part
- The first paragraph in Section 2.4 may be confusing. Perhaps write "Suppose there exists a candidate eq. ... If such an eq. exists, then...". On page 10 and thereafter it is clear.
- What happens here?



# References I

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